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updated: October 29, 2017

## Charles Winthrop Clark

I am a theoretical atomic and molecular physicist. My main research activities are in the areas of ultracold gases, quantum information and telecommunications, and atomic and molecular phenomena on surfaces, in condensed matter, and in nuclear reactions.

### — Vital data

Citizen of U.S.A. Born 9/30/1952, Minneapolis, Minnesota, eldest son of Robert Newhall Clark and Mary Quiatt Clark. Graduate of Seattle Public Schools. Married Deborah Jabon-Clark, 8/24/74.

### — Scientific lineage

[Link to scientific lineage at academictree.org.](#) This open, user content-driven database is neither controlled nor maintained by me.

### — Work experience

NIST Fellow Physical Measurement Laboratory National Institute of Standards and Technology Gaithersburg, MD 20899 Supervisors: Carl J. Williams (to 3/2016), Jon Pratt	12/2010 – present
Fellow, Joint Quantum Institute Co-Director, Joint Quantum Institute National Institute of Standards and Technology and the University of Maryland College Park, MD 20742	3/2007 – present 3/2011 – 3/2016
Chief, Electron and Optical Physics Division Physics Laboratory / Physical Measurement Laboratory National Institute of Standards and Technology Gaithersburg, MD 20899 Supervisor: Katharine B. Gebbie	8/1990 – 12/2010
Program Manager, Atomic and Molecular Physics Electronics S&T Division, Code 312 Office of Naval Research 800 N. Quincy Street Arlington, VA 22217 (703)696-5267 Supervisors: Kristl Hathaway (to 6/2005), Preston Grounds (to 11/2010), Michael Pollock	10/2003 – 12/2014

Acting Chief, Electron and Optical Physics Division  
Center for Atomic, Molecular and Optical Physics  
National Institute of Standards and Technology  
Gaithersburg, MD 20899  
(301) 975-3709  
Supervisor: Katharine B. Gebbie  
11/1989 - 8/1990

Physicist, Radiation Physics Division  
National Institute of Standards and Technology  
(until 10/1/1988, the National Bureau of Standards)  
Gaithersburg, MD 20899  
Supervisors: Robert P. Madden (to 10/1985); Thomas B. Lucatorto (from 10/1985)  
3/1984 - 11/1989

Physicist (contractor)  
National Bureau of Standards  
Gaithersburg, MD 20899  
Supervisor: Thomas B. Lucatorto  
10/1983 - 3/1984

National Research Council Postdoctoral Fellow  
Atomic and Plasma Radiation Division  
National Bureau of Standards  
Gaithersburg, MD 20899  
Supervisor: Andrew W. Weiss  
10/1981 - 10/1983

Junior Research Associate  
Daresbury Laboratory  
Daresbury, Warrington, WA4 4AD  
England  
Supervisor: Philip G. Burke  
9/1979 - 10/1981

Research Associate  
Department of Physics  
University of Chicago  
Chicago, IL 60637  
Supervisor: Ugo Fano  
1/1979 - 9/1979

## — Educational experience

### — Ph.D. theses supervised

- Yi-Hsieh Wang, "Pair creation and pair annihilation in Bose-Einstein condensates," Chemical Physics, University of Maryland, 2017
- Alejandra Maldonado Trapp, "Correlations in quantum information protocols," Physics, University of Concepción, Chile, 2016 (co-supervised with L. Roa)
- Jacob C. McComb, "Neutron detection by scintillation of noble-gas excimers," Nuclear Engineering, University of Maryland, 2012 (co-supervised with M. Al-Sheikhly and M. A. Coplan)
- Daniel J. Rogers, "New technologies for broadband quantum key distribution: sources, detectors and systems," Chemical Physics, University of Maryland, 2008
- Ana Maria Rey, "Ultracold bosonic atoms in optical lattices," Physics, University of Maryland, 2004. Winner, American Physical Society Award for Outstanding Doctoral Thesis Research in Atomic, Molecular, or Optical Physics, 2005
- Nicolai Nygaard, "Superfluidity in a degenerate atomic Fermi gas," Chemical Physics, University of Maryland, 2003
- Robert J. Dodd, "Bose-Einstein condensation in atomic alkali gases," Chemical Physics, University of Maryland, 1997. Finalist, American Physical Society Award for Outstanding Doctoral Thesis Research in Atomic, Molecular, or Optical Physics, 1998
- Wei-Chih Liu, "High-order radiative processes of atoms in intense laser fields," Chemical Physics, University of Maryland, 1996

### — Graduate courses taught

- ["Mathematical Elements of Quantum Physics: Laplace's equation, spherical harmonics, quantum oscillators and the hydrogen atom,"](#) PHYS499E/CHPH719E, University of Maryland, Winter Term, 2017
- ["Exploring Quantum Physics,"](#) University of Maryland massive open online course designed and taught in collaboration with Victor Galitski, delivered on Coursera, March – May 2013; second edition, October – December 2013; third edition, April – June 2014; fourth edition, March – May 2015. Over 100,000 students have enrolled in this course. Over 700 are members of the LinkedIn Group, ["Exploring Quantum Physics" Alumni.](#)
- "Kamp Kwal-i-fire," a preparation course for the Ph.D. qualifier exams in Physics and Chemical Physics at the University of Maryland, taught each summer since 1997 at NIST, approximately ten two-hour sessions per summer
- "Responsible Conduct of Research," a one-day graduate course taught at the University of Maryland, June 4, 2010
- ["Case Studies in Scientific Ethics,"](#) CHPH 714, one-credit course, University of Maryland, Winter Term, 2010
- "Bose-Einstein Condensation," CHPH 718P/PHYS 798P, three-credit course, University of Maryland, Autumn Term, 1998
- "Atomic Collisions and Spectra," CHPH 718P, three-credit course, University of Maryland, Autumn Term, 1993

## — Graduate education

Ph.D., Physics 8/1979  
University of Chicago  
Chicago, IL 60637  
Thesis: “Electron Scattering From Diatomic Polar Molecules”  
Supervisor: Ugo Fano

Guest Graduate Student 1/1978 - 8/1979  
Radiological and Environmental Research Division  
Argonne National Laboratory  
Argonne, IL 60439  
Supervisor: Mitio Inokuti

S.M., Physics 9/1974 - 3/1976  
University of Chicago  
Chicago, IL 60637

## — Undergraduate education

B.A. (honors), Mathematics and Physics 9/1970 - 6/1974  
magna cum laude  
Western Washington State College-  
Bellingham, WA 98225

University of Washington 6/1973 - 8/1973  
Seattle, WA 98105

Undergraduate Honors Research Participation Program 1/1973 - 5/1973  
Solid State Science Division  
Argonne National Laboratory  
Argonne, IL 60439  
Supervisor: Rudolf P. Hübener

## — Professional activities

### — Professional society leadership

Interim Past Chair, Mid-Atlantic Section, American Physical Society, 2012 – 2013  
Retiring Chair (2011), Chair (2010) and Chair Elect (2009), Physics Section, American Association for the Advancement of Science  
Past Chair (2006), Chair (2005), Chair-Elect (2004), and Vice-Chair (2003), Division of Atomic, Molecular, and Optical Physics, American Physical Society

### — Other leadership positions

Co-Chair for Neutron Physics, 2018 American Conference on Neutron Scattering, College Park, MD, 6/2018  
Organizer, Workshop on Matter-Wave Interferometry, Joint Quantum Institute, College Park, MD, 9/2016

Adjunct Professor of Physics, University of Maryland, 2007 – present  
Visiting Scholar, National University of Singapore, 2007 – present  
Fellow, Joint Quantum Institute, University of Maryland, 2007 – present  
Adjunct Professor (1990 - ) and Affiliate (2009 - ), Institute for Physical Science and Technology,  
University of Maryland, 1990 – present  
Distinguished Visiting Professor of Quantum Physics, University of Malaya, 2013 – 2015  
Adjunct Professor, Australian National University, 2012 – 2014  
Member, Leadership Board, College of Sciences and Technology, Western Washington University,  
2009 – 2014  
Co-Organizer, Nanotechnology Symposium, 2014 USDA Agricultural Outlook Forum, Arlington, VA,  
2/2014  
Chair, Nominating Committee, Mid-Atlantic Section, American Physical Society, 2013  
Chair, Advisory Board for the Australian Research Council Centre of Excellence in Antimatter-Matter  
Studies, 2006 - 2013  
Chair, Organizing Committee, “Towards Quantum Standards: A Workshop on Quantum Information  
Technology,” The Royal Society, London, 5/2006  
Chair, NSERC Review Committee for the Institute for Quantum Computing, Waterloo, Ontario, 2006  
Chair, Fellows and Honorary Members Committee, Optical Society of America, 2006  
Chair, Organizing Committee, Workshop on Quantum Information Science and Emerging  
Technologies, Boulder, CO, 4/2004  
Co-organizer, “Resonances and Reflections: Profiles of Ugo Fano's Physics and Its Influences,” Satellite  
Meeting of the International Conference on Atomic Physics, Cambridge, MA, 7/2002  
Co-organizer, Summer Programme on Bose-Einstein Condensation, European Centre for Theoretical  
Studies in Nuclear Physics and Related Areas, Trento, Italy, 7-8/2002  
Chair, Physics Panel II, U. S. Civilian Research and Development Foundation, 2001  
Co-organizer, Workshop on Computational Methods for Few-Body Dynamical Systems, Gaithersburg,  
MD, 11/2000  
Chair, National Science Foundation Special Emphasis Panel for the Rochester Theory Center, 1998  
Chair, Tellers Committee, Optical Society of America, 1995  
Chair, Organizing Committee, NIST Workshop on Quantum Computing and Communication,  
Gaithersburg, MD, 8/1994  
Chair, Selection Committee, American Physical Society Award for Outstanding Doctoral Thesis  
Research in Atomic, Molecular, or Optical Physics, 1993  
Chair, Local Committee, 8th National Conference on Synchrotron Radiation Instrumentation,  
Gaithersburg, MD, 8/1993  
Chair, National Academy of Sciences/National Research Council Committee on Line Spectra of the  
Elements - Atomic Spectroscopy, 1989-91  
Co-director, NATO Advanced Study Institute on Atoms in Strong Fields, Kos, Greece, 10/1988  
Co-organizer, “Atomic Spectra and Collisions in External Fields II,” satellite meeting of the XV  
International Conference on the Physics of Electronic and Atomic Collisions, Egham, England,  
7/1987  
Co-organizer, symposium on “Formation and Decay of Multiply-Excited States,” IV International  
Conference on Multiphoton Processes, Boulder, CO, 7/1987  
Organizer, symposium on “Physics of X-ray Lasers,” 1986 Annual Meeting, Optical Society of America,  
Seattle, WA, 11/1986  
Co-organizer, “Workshop on Atomic Spectra and Collisions in External Fields,” Gaithersburg, MD,  
10/1984

## — Editorial positions

Editor for Scientific Applications, *NIST Digital Library of Mathematical Functions*, 1998 – present  
Member, Editorial Advisory Board, *Springer Series on Atomic, Optical, and Plasma Physics* (Springer Verlag), 2002 – present  
Member, Editorial Board, *Journal of Physics B: Atomic, Molecular, and Optical Physics*, 1996 – 2006  
Associate Editor, *Optics Express*, 1997 – 2000  
Guest Editor, Feature Issue on Bose-Einstein Condensation, *Journal of Research of the National Institute of Standards and Technology*, 1996  
Topical Editor for Atomic Spectroscopy, *Journal of the Optical Society of America B*, 1986-1992

## — Committee service

Member, Nominating Committee, Division of Atomic, Molecular and Optical Physics, American Physical Society, 2016-2017  
Member, Selection Committee, American Physical Society LeRoy Apker Award, 2013-2015  
Member, Review Committee for the Atomic and Molecular Physics Laboratories, Research School of Physics and Engineering, Australian National University, 2012  
Member, Selection Committee, Alan T. Waterman Award, National Science Foundation, 2010 – 2012  
Member, Selection Committee, American Physical Society Congressional Fellows Program, 2010  
Member, Scientific Committee, ICREA Workshop on Quantum Gauge Theories and Ultracold Atoms, 2009  
Member, Annual Meeting Program Committee, American Association for the Advancement of Science, 2000-2006  
Member, Board of Directors, Senior Executives Association, U.S. Department of Commerce, 2004-2009  
Member, Fellowship Committee, American Physical Society, 2003-2005  
Member, Physics Policy Committee, American Physical Society, 2005-2007  
Member, Fellows and Honorary Members Committee, Optical Society of America, 2005  
Member, Nominating Committee, Topical Group on Quantum Information, Concepts and Computation, American Physical Society, 2005  
Member, Davisson-Germer Prize Committee, American Physical Society, 2004-2006  
Member, Advisory Board, Institute for Theoretical Atomic and Molecular Physics, Harvard-Smithsonian Center for Astrophysics, 2001-2004  
Member, Program Committee, March Meeting of the American Physical Society, 2001-2004  
Member, International Advisory Committee, Eighth International Conference on Synchrotron Radiation Instrumentation, 2002-2003  
Member, Screening Committee, Science Journalism Awards, American Association for the Advancement of Science, 2002  
Member, Peer Review Rapid Action Committee, Optical Society of America, 2001  
Panelist, National Science Foundation Workshop on Computational Physics, 2001  
Member, Collaborative Computational Project 2 - Continuum States of Atoms and Molecules, Science and Engineering Research Council (United Kingdom), 1990 – 2002  
Member, Committee of Visitors, Directorate for Mathematical and Physical Sciences, National Science Foundation, 1997  
Member, Program Committee, Third International Conference on Quantum Functional Devices, Gaithersburg, MD, 11/1997  
Member, Selection Committee, E. O. Lawrence Award of the U. S. Department of Energy, 1996  
Member (Past Chair), Tellers Committee, Optical Society of America, 1996

Member, Local Committee, Conference on New Methods in Electronic Structure Calculation, St. Mary's College of Maryland, 5/1995

Member, Subcommittee on Laser Spectroscopy, Quantum Electronics and Laser Science Conference (QELS '95), 5/1995

Member, Program Committee, Topical Conference on High Field Interactions and Short Wavelength Generation, Optical Society of America, 8/1994

Member, Executive Committee, Division of Atomic, Molecular, and Optical Physics, American Physical Society, 1990-91

Consultant, Princeton Plasma Physics Laboratory, Princeton, NJ, 1984-1990

Member, National Academy of Sciences/National Research Council Committee on Line Spectra of the Elements - Atomic Spectroscopy, 1987-1989

Member, Ad Hoc Committee on Page Charge Analysis, Optical Society of America, 1987 – 1988

Member, Organizing Committee, IV International Conference on Multiphoton Processes, Boulder, CO, 7/1987

Member, Technical Program Committee, 1986 Annual Meeting, Optical Society of America, Seattle, WA, 11/1986

### — Reviewer for journals

<i>American Journal of Physics</i>	<i>Journal of Research of the National Institute of Standards and Technology</i>
<i>Applied Optics</i>	<i>Journal of the Optical Society of America B</i>
<i>Choice Current Reviews for Academic Libraries</i>	<i>Journal of the Washington Academy of Sciences</i>
<i>Computers in Physics</i>	<i>Metrologia</i>
<i>Europhysics Letters</i>	<i>Molecular Physics</i>
<i>Foundations of Physics</i>	<i>Nature</i>
<i>International Journal of Quantum Chemistry</i>	<i>New Journal of Physics</i>
<i>International Journal of Quantum Information</i>	<i>Optics Letters</i>
<i>Journal of Chemical Physics</i>	<i>Physical Chemistry Chemical Physics</i>
<i>Journal of Computational Physics</i>	<i>Physical Review A</i>
<i>Journal of Electron Spectroscopy and Related Phenomena</i>	<i>Physical Review Letters</i>
<i>Journal of Low Temperature Physics</i>	<i>Physics Letters A</i>
<i>Journal of Physics B: Atomic, Molecular, and Optical Physics</i>	<i>Radiation Physics and Chemistry</i>
<i>Journal of Physics D: Applied Physics</i>	<i>Reviews of Modern Physics</i>
	<i>Revisita Fisica Mexicana</i>
	<i>Science</i>

### — Reviewer for research proposals

Advanced Technology Program, National Institute of Standards and Technology	Israel National Science Foundation
Agency for Science, Technology and Research (Singapore)	Marsden Fund (New Zealand)
Australian Research Council	Natural Sciences and Engineering Research Council of Canada
Austrian Science Fund	Networks of Centres of Excellence, Industry Canada
Canada Council for the Arts	Ontario Research Fund
Defense Advanced Research Projects Agency	Royal Society of London
Engineering and Physical Sciences Research Council, U.K.	Royal Society of New Zealand
Irish Science and Technology Agency	Stichting voor Fundamenteel Onderzoek der Materie (FOM: Netherlands)

U. S. Air Force Office of Scientific Research  
U. S. Army Research Office  
U. S. Civilian Research and Development  
Foundation

U. S. Department of Commerce  
U. S. Department of Energy  
U. S. National Science Foundation  
U. S. Office of Naval Research

### External referee for appointments, promotions, and awards

Alfred P. Sloan Foundation  
Amherst College  
Australian Academy of Sciences  
Australian Research Council  
Australian National University  
Canada Research Chairs  
Canadian Institute for Advanced Research  
Chateaubriand Fellowship Program, Embassy  
of France to the United States  
College of Reviewers, Canada Research  
Chairs  
David and Lucile Packard Foundation  
Flinders University  
Franklin Institute  
Georgia Institute of Technology  
Georgia Southern University  
Harvard University  
Koç University, Istanbul  
MacArthur Foundation  
Merton College, University of Oxford  
Nanyang Technological University  
National Institute of Education, Singapore  
National University of Singapore  
Princeton University  
Queen's University of Belfast  
Royal Society of London

Royal Society of New Zealand  
Scientific and Technological Research  
Council of Turkey (TÜBİTAK)  
Seoul National University  
Simons Foundation  
United Arab Emirates University  
University of British Columbia  
University of California, Riverside  
University of Colorado  
University of Connecticut  
University of Illinois at Urbana-Champaign  
University of Kentucky  
University of Maryland  
University of Michigan  
University of Oklahoma  
University of Oregon  
University of Otago  
University of Oxford  
University of Queensland  
University of Southern California  
University of Stuttgart  
University of Toledo  
University of Virginia  
Washington State University  
Yarmouk University

### External examiner of Ph.D. theses

Georgetown University  
National University of Singapore  
University of Malaya

University of Otago  
University of Oxford  
University of Queensland

### Reviewer for research assessment exercises

Australian National University

### Membership in professional societies

American Association for the Advancement of Science (Fellow)  
American Physical Society (Life Member and Fellow)



Optical Society of America (Fellow)  
Institute of Physics (Fellow)  
Washington Academy of Sciences (Fellow)  
National Society of Black Physicists

### — Honors and awards

Visiting Scholar, Merton College, University of Oxford (2017)  
Edward Uhler Condon Award, National Institute of Standards and Technology (2013)  
Award for Information Technology Achievement, *Government Computer News* (2011)  
Gold Medal, U.S. Department of Commerce (2011)  
Appointed NIST Fellow (2010)  
Bronze Medal, National Institute of Standards and Technology (2009)  
R&D 100 Award, *R&D Magazine* (2008)  
Distinguished Presidential Rank Award, U.S. Senior Executive Service (2007)  
Gold Medal, U.S. Department of Commerce (2004)  
Physical Sciences Award, Washington Academy of Sciences (2003)  
Fellow, Washington Academy of Sciences (2003)  
Archie Mahan Prize, Optical Society of America (2002)  
Edward Uhler Condon Award, National Institute of Standards and Technology (2002)  
Safety Award, National Institute of Standards and Technology (2002)  
Fellow, American Association for the Advancement of Science (2001)  
Dr. Lee Visiting Fellow, Christ Church, University of Oxford (1999)  
Fellow, Institute of Physics (1999)  
Appointed to Senior Executive Service, U.S. Department of Commerce (1997)  
Silver Medal, U.S. Department of Commerce (1994)  
Fellow, Optical Society of America (1994)  
Fellow, American Physical Society (1992)  
Visiting Fellow, Research School of Physical Sciences, Australian National University (1992)  
Equal Employment Opportunity Award, National Institute of Standards and Technology (1991)  
Excellence in Research Award, National Bureau of Standards Chapter of Sigma Xi (1987)  
Visiting Fellow, Research School of Physical Sciences, Australian National University (1986)  
National Research Council Postdoctoral Research Associateship, National Bureau of Standards (1981 - 83)

### — Invited talks since 1985

“Neutron Particles and Neutron Waves,” Physics Colloquium, Simon Fraser University, Vancouver, BC, 10/27/2017  
“Neutron Particles and Neutron Waves,” Physics Colloquium, Western Washington University, Bellingham, WA, 10/25/2017  
“Neutron Particles and Neutron Waves,” Physics Colloquium, University of Washington, Seattle, WA, 10/24/2017  
“Neutron Particles and Neutron Waves,” Physics Colloquium, University of Oregon, Eugene, OR, 10/19/2017  
“Neutron Particles and Neutron Waves,” Physics Colloquium, Washington State University, Pullman, WA, 10/17/2017

- “Neutron Particles and Neutron Waves,” Physics Seminar, U.S. Naval Academy, Annapolis, MD, 9/30/2017
- “Spinor Bose-Einstein Condensates of Positronium,” POSMOL 2017 - XIX International Workshop on Low-Energy Positron and Positronium Physics, Magnetic Island, Queensland, Australia, 7/23/2017
- “Twisting the Neutron Wavefunction,” 15<sup>th</sup> Anniversary Symposium, Institute for Quantum Computing, Iqaluit, Nunavut, Canada, 7/10/2017
- “Twisting the Neutron Wavefunction,” Radiation Physics Division Seminar, National Institute of Standards and Technology, Gaithersburg, MD, 6/20/2017
- “CAMOP and Camelot,” Katharine Blodgett Gebbie Symposium, National Institute of Standards and Technology, Gaithersburg, MD, 5/18/2017
- “Atomtronics: a very short introduction,” 2017 Atomtronics Workshop, Benasque, Spain, 5/11/2017
- “Induced density correlations in a sonic black hole condensate,” 2017 Atomtronics Workshop, Benasque, Spain, 5/8/2017
- “The Strange New World Seen By Animals,” Take Our Daughters and Sons to Work Day, Office of the General Counsel, U.S. Department of Commerce, Washington, DC, 4/27/2017
- “Twisting the Neutron Wavefunction,” NIST Center for Neutron Research Seminar, National Institute of Standards and Technology, Gaithersburg, MD, 4/18/2017
- “Twisting Neutron Wavefunctions,” Optics Division Seminar, Department of Physics, University of Strathclyde, Glasgow, Scotland, 3/2/2017
- “Twisting Neutron Wavefunctions,” Occam Lecture, Merton College, University of Oxford, Oxford, England, 2/27/2017
- “Atomtronics: a very short introduction,” Flash Talk, Annual Meeting of the American Association for the Advancement of Science, Boston, MA, 2/17/2017
- “Twisting Neutron Wavefunctions,” Atomic, Molecular Optical and Positron Physics Seminar, University College London, London, England, 2/8/2017
- “Black holes and atomtronics,” AtomChip Workshop, Centre for Quantum Technologies, Pangkil Island, Indonesia, 12/15/2016
- “Twisting Neutron Wavefunctions,” Colloquium, Centre for Research in Photonics, University of Ottawa, Ottawa, ON, 11/16/2016
- “Over the rainbow: the other world seen by animals,” IQC Public Lecture, Institute for Quantum Computing, University of Waterloo, Waterloo, ON, 11/15/2016
- “Twisting Neutron Wavefunctions,” IQC Seminar, Institute for Quantum Computing, University of Waterloo, Waterloo, ON, 11/15/2016
- “Hawking radiation in laboratory Bose-Einstein condensates,” High Energy Astrophysics Group Seminar, University of Maryland, College Park, MD, 11/4/2016
- “Twisting Neutron Wavefunctions,” Networks and Communication Research Seminar, U.S. Army Research Laboratory, Adelphi, MD, 11/3/2016
- “Twisting the quantum,” Physics Colloquium, Louisiana State University, Baton Rouge, LA, 10/13/2016
- “Fauxing radiation from Bose-Einstein condensates”, Quantum Krispy Kreme Seminar, Louisiana State University, Baton Rouge, LA, 10/12/2016
- “Elections: Quantum Dense Coding of American History,” Perspectives on Quantum Optics, University of Warsaw, Poland, 9/25/2016

- “Mechanisms of stimulated Hawking radiation in laboratory Bose-Einstein condensates,” National Laboratory of Atomic, Molecular and Optical Physics, Nicolaus Copernicus University, Toruń, Poland, 9/19/2016
- “Twisting Neutron Wavefunctions,” Center for Theoretical Physics, Polish Academy of Sciences, Warsaw, Poland, 9/16/2016
- “How American Presidents are Chosen,” Institute of Physics, Polish Academy of Sciences, Warsaw, Poland, 9/14/2016
- “Mechanisms of stimulated Hawking radiation in laboratory Bose-Einstein condensates,” 40<sup>th</sup> International Conference on Theoretical Physics: Correlation and Coherence at Different Scales, Ustroń, Poland, 9/8/2016
- “Twisting Neutron Wavefunctions,” American Conference on Neutron Scattering, Long Beach, CA, 7/13/2016
- “How quantum mechanics cracked the nuclear code,” Colloquium, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, 6/3/2016
- “How quantum mechanics cracked the nuclear code,” Mechanical Engineering 432 guest lecture, University of Maryland, College Park, MD, 4/21/2016
- “Twisting the quantum,” Physics Colloquium, University of Colorado, Boulder, CO, 4/6/2016
- “Twisting the quantum,” Atominstitut Seminar, Technische Universität Wien, Vienna, Austria, 3/7/2016
- “Twisting the quantum,” Research Institute for Symbolic Computation Seminar, Linz, Austria, 3/3/2016
- “Resonant wavepackets and shock waves in an atomtronic SQUID,” Institute for Quantum Optics and Quantum Information Seminar, Innsbruck, Austria, 3/2/2016
- “Is Brooklyn expanding?” Joint Center for Quantum Information and Computer Science Seminar, University of Maryland, College Park, MD 2/24/2016
- “Resonant wavepackets and shock waves in an atomtronic SQUID,” AtomChip Workshop, Centre for Quantum Technologies, Pangkil Island, Indonesia, 12/15/2015
- “Twisting neutron waves,” Laboratory for Physical Sciences, College Park, MD, 10/14/2015
- “By river and road to Atomic City,” Neutron Physics Group Seminar, National Institute of Standards and Technology, Gaithersburg, MD 10/13/2015
- “Is Brooklyn expanding?” American Physical Society Local Link, Washington, DC 10/12/2015
- “Over the rainbow: other worlds seen by animals,” Philosophical Society of Washington, Washington, DC, 09/25/2015
- “Twisting neutron waves,” XVIII International Workshop on Low-Energy Positron and Positronium Physics (POSMOL 15), Lisbon, Portugal, 07/16/2015
- “Twisting neutron waves,” Center for Optical Quantum Technologies, University of Hamburg, Hamburg, Germany, 07/01/2015
- “The other world seen by animals,” IONS Karlsruhe 2015, Karlsruhe, Germany, 06/28/2015
- “The other world seen by animals,” Take Our Daughters and Sons to Work Day, National Institute of Standards and Technology, Gaithersburg, MD 04/23/2015
- “Over the rainbow: the other world seen by animals,” Stanford Optical Society, Stanford University, Stanford, CA 02/17/2015
- “Next-Generation Atomtronics,” Assistant Secretary of Defense for Research and Engineering Basic Research Forum, Arlington, VA, 01/22/2015
- “Over the rainbow: the other world seen by animals,” Neutron Physics Group Seminar, National Institute of Standards and Technology, Gaithersburg, MD 01/13/2015

- “Hysteresis in a quantized superfluid atomtronic circuit,” AtomChip Workshop, Centre for Quantum Technologies, Pangkil Island, Indonesia, 12/16/2014
- “Experiences as a Coursera student and instructor,” Physics and Applied Physics Seminar, Nanyang Technological University, Singapore, 12/12/2014
- “Over the rainbow: the other world seen by animals,” Science in the Café, Science Centre Singapore, 12/10/2014
- “Adventures inside the atom,” Quantum Measurement Division Seminar, National Institute of Standards and Technology, 10/16/2014
- “The Other World Seen by Animals,” Physics Colloquium, American University, Washington, DC, 10/01/2014
- “Exploring Quantum Physics,” Coursera Meetup, University of Maryland, College Park, MD, 06/13/2014
- “Exploring Quantum Physics,” Coursera Meetup, University of Maryland, College Park, MD, 05/28/2014
- “The Joint Quantum Institute of the National Institute of Standards and Technology and the University of Maryland,” Standards Alumni Association, Gaithersburg, Maryland, 04/17/2014
- “Hysteresis in a quantized superfluid atomtronic circuit,” Atomic, Molecular, Optical and Positron Physics Seminar, University College London, London, England, 03/26/2014
- “Optics – The Science of Everything,” Presidential Award for Excellence in Mathematics and Science Teaching, Office of Science and Technology Policy, Washington, DC, 03/03/2014
- “Atomtronics of Matter Waves,” Physics Colloquium, Temple University, Philadelphia, PA, 01/27/2014
- “Stirring Ring Bose-Einstein Condensates,” AtomChip Workshop, Centre for Quantum Technologies, Pangkil Island, Indonesia, 12/17/2013
- “Fundamental Constants/100<sup>th</sup> Birthday of the Bohr Model of the Atom,” Coursera Meetup, University of Malaya, Kuala Lumpur, Malaysia, 12/11/2013
- “Exploring Quantum Physics,” Coursera Meetup, Optical Society of America, Washington, DC, 11/22/2013
- “Niels Bohr’s Nutcracker,” Physics Colloquium, Georgia Southern University, Statesboro, GA, 11/11/2013
- “Extreme Ultraviolet: The Grand Adventure,” Materials Science and Engineering Seminar, University of Maryland, College Park, MD, 11/1/2013
- “How Quantum Mechanics Cracked the Nuclear Code,” Physics 405 guest lecture, University of Maryland, College Park, MD, 10/16/2013
- “Exploring Quantum Physics,” Coursera Meetup, University of Central Florida, Orlando, FL, 10/8/2013
- “Niels Bohr’s Nutcracker,” Symposium on the 100th Anniversary of the Bohr Atom, Frontiers in Optics 2013/Laser Science XXIX, Hilton Bonnet Creek, Orlando, FL, 10/6/2013
- “Extreme Ultraviolet: The Grand Adventure,” Banquet Speech, 17th Pan-American Synchrotron Radiation Instrumentation Conference, Gaithersburg Hilton, Gaithersburg, MD, 6/20/2013
- “The Other World Seen by Animals,” Sigma Xi Awards Banquet, National Institute of Standards and Technology, Gaithersburg, MD, 6/11/2013
- “Experience in online education as a student and instructor,” HERO Seminar, National Chiao Tung University, Hsinchu City, Taiwan, 6/3/2013

- “Experience in online education as a student and instructor,” Centre for Quantum Technologies Seminar, National University of Singapore, Singapore, 5/30/2013
- “Experience in online education as a student and instructor,” Vietnam National University – University of Science, Ho Chi Minh City, Vietnam, 5/27/2013
- “Experience in online education as a student and instructor,” Hanoi National University of Education, Hanoi, Vietnam, 5/24/2013
- “Experience in online education as a student and instructor,” High Impact Research Seminar, University of Malaya, Kuala Lumpur, Malaysia, 5/22/2013
- “The Other World Seen by Animals,” High Impact Research Seminar, University of Malaya, Kuala Lumpur, Malaysia, 5/22/2013
- “Extreme Ultraviolet: The Grand Adventure,” Physics Applied to Advances In Measurement Technology, A Symposium in Honor of Dr. Katharine B. Gebbie, National Institute of Standards and Technology, Gaithersburg, MD, 5/8/2013
- “The Other World Seen by Animals,” Take Our Children to Work Day, National Institute of Standards and Technology, Gaithersburg, MD, 4/25/2013
- “The Other World Seen by Animals,” Physics Colloquium, California State University, Sacramento, CA 4/18/2013
- “Photon, Atom and Neutron: How Quantum Mechanics Cracked the Nuclear Code,” Physics Colloquium, Pennsylvania State University, University Park, PA, 2/28/2013
- “Navigation, sensing and timekeeping with cold atoms,” Defense Science and Technology Organisation, Edinburgh, South Australia, 12/3/2012
- “Stirring Ring Bose-Einstein Condensates,” Quantum Gas Workshop 2012, University of Queensland, Brisbane, Australia, 11/27/2012
- “Use of advanced features of the Digital Library of Mathematical Functions,” Neutron Physics Group Seminar, National Institute of Standards and Technology, Gaithersburg, MD 8/7/2012
- “The Other World Seen by Animals,” SURF Summer Seminar Series, National Institute of Standards and Technology, Gaithersburg, MD 6/28/2012
- “Use of advanced features of the NIST Digital Library of Mathematical Functions,” Institut Henri Poincaré, Paris, France, 5/21/2012
- “Next-Generation Atomtronics,” Observatoire de Paris, Paris, France, 5/16/2012
- “Use of the NIST Digital Library of Mathematical Functions,” Mathematics Seminar, University of Paris Diderot, Paris, France, 5/14/2012
- “Next-Generation Atomtronics,” Journées Fédération de Recherche en Mathématiques de Paris centre/GT-Informatique Quantique, Paris, France, 5/9/2012
- “Photon, Atom and Neutron: How Quantum Mechanics Cracked the Nuclear Code,” Physics Colloquium, University of California Riverside, Riverside, CA, 3/15/2012
- “Next-Generation Atomtronics,” Annual Meeting of the American Association for the Advancement of Science, Vancouver, BC, 2/18/2012
- “The Other World Seen by Animals,” Public Lecture, College of Sciences and Technology, Western Washington University, Bellingham, WA, 2/15/2012
- “Ferdinand Brickwedde and the Discovery and Exploitation of Deuterium,” Brickwedde Lecture, Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD, 2/9/2012
- “NIST and the Nobel Prize in Chemistry: Deuterium,” Physical Chemistry Seminar, University of Maryland, College Park, MD, 2/8/2012

- “Photon, Atom and Neutron: How Quantum Mechanics Cracked the Nuclear Code,” Public Lecture, Faculty of Science, National University of Singapore, Singapore, 1/18/2012
- “Next-Generation Atomtronic,” Frontier of Science Lecture, University of Malaya, Kuala Lumpur, Malaysia, 1/16/2012
- “NIST and the Nobel Prize in Chemistry: Deuterium,” Institute of Molecular Science Seminar, National Chiao Tung University, Hsinchu, Taiwan 1/11/2012
- “Next-Generation Atomtronic,” Institute of Atomic and Molecular Sciences Seminar, Academia Sinica, Taipei, Taiwan, 1/10/2012
- “Neutron Research at the National Institute of Standards and Technology and the University of Maryland,” Institute of Nuclear Energy Research, Longtan, Taiwan, 1/9/2012
- “NIST and the Nobel Prize in Chemistry: Deuterium,” Sigma Xi Lecture, National Institute of Standards and Technology, Gaithersburg, MD, 12/7/2011
- “Detecting slow neutrons with atoms,” MacQuarie University Research Centre in Quantum Science and Technology Seminar, Sydney, Australia, 11/10/2011
- “Detecting slow neutrons with atoms,” School of Chemical and Physical Sciences Seminar, Flinders University, Adelaide, Australia, 11/9/2011
- “Detecting slow neutrons with atoms,” Centre for Antimatter-Matter Studies Workshop, Canberra, Australia, 11/4/2011
- “Slow neutron detection without helium-3: far ultraviolet noble-gas-excimer radiation induced by neutron reactions with lithium-6 and boron-10,” Eighth International Workshop on Cold Neutrons, B.P. Konstantinov Petersburg Nuclear Physics Institute, St. Petersburg, Russia, 6/19/2011
- “Next-generation atomtronic,” International Conference of Young Scientists - Low Temperature Physics, B. Verkin Institute for Low Temperature Physics and Engineering, Kharkiv, Ukraine, 6/10/2011
- “NIST's New Science and Engineering Research Tool: DLMF,” NIST Colloquium, National Institute of Standards and Technology, Gaithersburg, MD, 5/13/2011
- “The NIST Digital Library of Mathematical Functions (DLMF): a new platform for STEM education,” Physics and Mathematics Colloquium, Georgia Southern University, Statesboro, GA, 4/29/2011
- “The NIST Digital Library of Mathematical Functions,” Center for Scientific Computing and Mathematical Modeling, University of Maryland, College Park, MD, 3/30/2011
- “Over the rainbow: extreme adventures in the ultraviolet,” Physics Colloquium, Bates College, Lewiston, ME, 3/11/2011
- “The other world seen by animals,” Public Lecture, University of Otago, Dunedin, New Zealand, 11/29/2010
- “Relativity at a billionth of the speed of light,” 2010 IONS-KOALA Conference, University of Otago, Dunedin, New Zealand, 11/29/2010
- “Atomtronic,” Workshop on Quantum Based Measurements and Quantum Information Science, Breckenridge, CO, 11/16/2010
- “Relativity at a billionth of the speed of light,” Student Chapter of the Optical Society of America, Autonomous University of San Luis Potosí, San Luis Potosí, Mexico, 11/05/2010
- “The NIST Handbook of Mathematical Functions,” Reiter’s Scientific, Professional and Technical Books, Washington, DC, 6/26/2010
- “Phases and phase fluctuations in ultracold gases,” APCTP-KIAS Joint Workshop on Quantum Entanglement and Dynamics in Correlated Many-Body Systems, Pohang, Korea, 5/17/2010

- “Condensed matter physics at nanograms/cubic centimeter,” Student Chapter of the Optical Society of America, San Francisco State University, San Francisco, CA, 4/26/2010
- “Over the rainbow: extreme adventures in the ultraviolet,” Take Our Children to Work Day, National Institute of Standards and Technology, Gaithersburg, MD, 4/22/2009
- “Over the rainbow: extreme adventures in the ultraviolet,” Student Chapter of the Optical Society of America, Lafayette College, Easton, PA, 4/9/2009
- “A decoherence-free neutron interferometer,” Australian Nuclear Science and Technology Organization, Lucas Heights, New South Wales, Australia, 4/1/10
- “Over the rainbow: extreme adventures in the ultraviolet,” Physics Colloquium, University of Maryland, College Park, MD, 3/2/2010
- “Over the rainbow: extreme adventures in the ultraviolet,” Physics Colloquium, Georgetown University, Washington, DC, 11/3/2009
- “Over the rainbow: extreme adventures in the ultraviolet,” Physics Colloquium, Bucknell University, Lewisburg, PA, 10/26/2009
- “Supersolids in ultracold gases,” Guest Lecture, Physics 332 (Quantum Mechanics), Bucknell University, Lewisburg, PA, 10/26/2009
- “Relativity at a billionth of the speed of light,” Joint Atomic Physics Seminar, Harvard University, Cambridge, MA, 10/7/2009
- “Next-generation atomtronics,” Annual Meeting of the Engineering, Manipulation and Characterization of Quantum States of Matter and Light (EMALI) Network, Pisa, Italy, 9/14/2009
- “Toolkits for quantum gauge potentials,” Workshop on Quantum Gauge Potentials and Ultracold Atoms, San Benet, Spain, 9/4/2009
- “Hack the quantum,” two days of demonstrations of quantum randomness, DEFCON 17, Las Vegas, NV, 7/31-8/1/2009
- “Extreme ultraviolet and optical signatures of neutron reactions,” Workshop on Helium-3 Issues and Alternatives for Neutron Detection, Savannah River Site, SC, 6/17/2009
- “Believe it or square root of NOT: quantum communication and quantum computing,” Undergraduate Engineering Assembly, The Johns Hopkins University, Baltimore, MD, 5/7/2009
- “Progress with NIST efforts with phantom development,” Lung Cancer Workshop VI, Bethesda, MD, 5/5/2009
- “Matter wave magic,” Physics Seminar, University of Maryland, College Park, MD, 1/13/2009
- “Relativity at a billionth of the speed of light,” Centre for Quantum Technologies, National University of Singapore, Singapore, 11/24/2008
- “Matter wave magic,” Physics Colloquium, Western Washington University, Bellingham, WA, 11/7/2008
- “Relativity at a billionth of the speed of light,” Stanford Photonics Research Center, Stanford University, Stanford, CA, 11/6/08
- “Matter wave magic,” Quantum Optics Seminar, Naval Air Systems Command, Patuxent River Naval Air Station, MD, 8/18/2008
- “Quantum Spookshow,” four days of live demonstrations of quantum cryptography at the 2008 Black Hat and DEFCON 16 meetings, Las Vegas, NV, 8/6-9/2008
- “Observation of the  $n(^3\text{He},t)p$  reaction by detection of far-ultraviolet radiation,” Symposium on Radiation Measurements and Applications (SORMA West), Berkeley, CA, 6/5/2008
- “Matter wave magic,” Physics Seminar, George Mason University, Fairfax, VA, 5/1/2008

- “New approaches to standardization of CT image evaluation,” Lung Cancer Workshop V, Hamburger University, Oak Brook, IL, 4/27/2008
- “Condensed matter physics at nanograms/cubic centimeter,” Physics Colloquium, University of Kentucky, Lexington, KY, 4/4/2008
- “Condensed matter physics at nanograms/cubic centimeter,” Laboratory for Physical Sciences, University of Maryland, College Park, MD, 3/5/2008
- “Observation of the  $n(^3\text{He},t)p$  reaction by detection of far-ultraviolet radiation,” Gaseous Electronics Meeting XV, Murramarang Resort, New South Wales, Australia, 2/5/2008
- “Condensed matter physics at nanograms/cubic centimeter,” Theoretical Atomic, Molecular and Optical Physics Seminar, The Queen’s University of Belfast, Belfast, Northern Ireland, 11/27/2007
- “Condensed matter physics at nanograms/cubic centimeter,” Physics Colloquium, Tulane University, New Orleans, LA, 11/13/2007
- “Condensed matter physics at nanograms/cubic centimeter,” Inaugural Symposium, Joint Quantum Institute, College Park, MD, 3/27/2007
- “Condensed matter physics at nanograms/cubic centimeter,” Physics Colloquium, Weizmann Institute of Science, Rehovot, Israel, 1/18/2007
- “Coherence and correlation in ultracold quantum gases,” short course for the Student Chapter of the Optical Society of America, Weizmann Institute of Science, Rehovot, Israel, 1/16-17/2007
- “Measurements and standards for EUVL optics,” Intel Ronler Acres Campus, Hillsboro, OR, 1/12/2007
- “Coherence and correlation in ultracold gases – the legacy of Dan Walls,” Inaugural Symposium, The Jack Dodd and Dan Walls Centre for Photonics and Ultra Cold Atoms, Auckland, NZ, 12/9/2006
- “Condensed matter physics at nanograms/cubic centimeter,” 2006 National Congress, Australian Institute of Physics, Brisbane, QLD, 12/6/2006
- “Believe it or square root of NOT,” XVII Undergraduate Research Symposium, Ana G. Mendez University System, San Juan, Puerto Rico, 9/15/2006
- “Ugo Fano, Enrico Fermi, and spectral line shapes,” Majorana Centenary Symposium, Gaithersburg, MD, 7/5/2006
- “The NIST Quantum Information Program and the standards process,” Towards Quantum Standards: A Workshop, The Royal Society, London, England, 5/24/2006
- “Telling time with atoms on land, sea, and in the air,” AMO Physics Seminar, University of Nebraska, 5/ 8/2006
- “Prospects for commercial quantum technologies and their impact on society,” Workshop on Industry in the Quantum Age, The Royal Society, London, England, 4/24/ 2006 (presentation given by videoconference)
- “Telling time with atoms on land, sea, and in the air,” Physics Colloquium, National University of Singapore, 4/10/2006
- “Telling time with atoms on land, sea, and in the air,” Physics Colloquium, Georgia Southern University, 3/9/2006
- “Method and madness in quantum gases,” Physics Colloquium, Kansas State University, Manhattan, KS, 5/2/2005
- “Ugo Fano, Enrico Fermi, and spectral line shapes,” AMO Physics Seminar, Kansas State University, Manhattan, KS, 5/2/2005



- “Generation and application of coherent matter waves,” Annual Meeting of the American Association for the Advancement of Science, Washington, DC, 2/20/2005
- “Practical atomic spectroscopy,” Physics 4243 - Atomic and Molecular Physics II, National University of Singapore, Singapore, 2/4/2005
- “Method and madness in quantum gases,” National University of Singapore, Singapore, 2/2/2005
- “Method and madness in quantum gases,” Tokyo University of Science, Tokyo, Japan, 1/26/2005
- “Method and madness in quantum gases,” University of Electro-Communications, Tokyo, Japan, 1/25/2005
- “Method and madness in quantum gases,” International Seminar on Atomic Processes, Shonan Village, Japan, 1/20/2005
- “Superfluid and laser analogies with coherent matter waves,” Informal Statistical Physics Seminar, University of Maryland, College Park, MD 11/23/2004
- “Quantum information and quantum computing,” XV Undergraduate Research Symposium, Universidad Metropolitana, San Juan, Puerto Rico, 10/1/2004
- “Generation and application of coherent matter waves,” Division Directors’ Brown Bag Lunch, Office of Naval Research, Arlington, VA, 4/20/2004
- “Superfluid and laser analogies with coherent matter waves,” Laboratory for Computer Design of Materials Seminar, George Mason University, Fairfax, VA 2/23/2004
- “Laser-like matter waves,” Electronic and Computer Engineering Seminar, Johns Hopkins University, Baltimore, MD, 12/4/2003
- “Coherent control of Bose-Einstein condensates,” Atomic and Laser Physics Seminar, Clarendon Laboratory, University of Oxford, Oxford, England, 10/3/03
- “Optimal control of Bose-Einstein condensates and degenerate Fermi gases in harmonic traps,” Symposium on Quantum Challenges, Warsaw, Poland, 9/4/03
- “Exciting science and engineering jobs in public service,” Presidential Classroom: The Science, Technology and Public Policy Program, Washington, DC, 6/24/03
- “Laser-like matter waves,” Huntsville Electro-Optical Society, Huntsville, AL 6/19/2003
- “Open issues in neutral atoms confined in optical lattices,” Workshop on Theory in Quantum Computing (ThInQC), Harpers Ferry, WV, 6/10/03
- “Introduction to Bose-Einstein condensation,” Tutorial Program on New Directions in Dilute Gas Bose-Einstein Condensation, March Meeting of the American Physical Society, Austin, TX, 3/2/2003
- “Superfluid and laser analogies in cold quantum gases,” National Capital Section of the Optical Society of America, Wheaton, MD, 1/21/2003
- “Superfluid and laser analogies in cold quantum gases,” Physics Colloquium, University of Delaware, Newark, DE, 10/30/2002
- “Superfluid and laser analogies in degenerate quantum gases,” Resonances and Reflections: Profiles of Ugo Fano's Physics and Its Influences, Harvard-Smithsonian Institute for Theoretical Atomic and Molecular Physics, Cambridge, MA, 6/25/2002
- “Over the rainbow: 200 years of infrared and ultraviolet radiation,” 8th International Conference on New Developments and Applications in Optical Radiometry (NEWRAD 2002), Gaithersburg, MD, 5/20/2002
- “Solitons and vortices in Bose-Einstein condensates,” Quantum Coherence and Information Seminar, University of Maryland at College Park, 4/25/2002
- “Over the rainbow,” Department of Physics and University Honors Program Distinguished Lecture Series, Georgia Southern University, Statesboro, GA, 4/5/2002

- “Solitons and vortices in Bose-Einstein condensates,” Physics Colloquium, Georgia Institute of Technology, Atlanta, GA, 4/3/2002
- “Superfluid and laser analogies in cold quantum gases,” Physics Colloquium, Temple University, Philadelphia, PA, 3/25/2002
- “Generation and application of coherent matter waves,” NIST/UMCP AMO Day, College Park, MD, 2/12/2002
- “Collective and single-particle excitations of Bose-Einstein condensates,” MIT/Harvard Center for Ultracold Atoms, Cambridge, MA, 11/20/2001
- “Soliton and vortex excitations of Bose-Einstein condensates,” Quantum Optics V, Koscielisko, Poland, 6/25/2001
- “Superfluid and laser analogies in quantum gases,” 2001 Quantum Electronics and Laser Science Conference, Baltimore, MD, 5/10/2001
- “Soliton and vortex excitations of Bose-Einstein condensates,” March Meeting of the American Physical Society, Seattle, WA, 3/12/2001
- “Theory and experiment in Bose-Einstein condensation,” Symposium on Quantum Control of Atoms and Fields, University of Rochester, Rochester, NY, 10/20/2000
- “Dynamics of vortex formation in rotating Bose-Einstein condensates,” Workshop on Rotating Bose-Einstein Condensates, European Centre for Theoretical Studies in Nuclear Physics, Trento, Italy, 6/11/2000
- “New challenges in deep ultraviolet metrology,” 2000 Measurement Science Conference, Anaheim, California, 1/21/2000
- “Physics of degenerate quantum gases,” Foundations and Frontiers of Physics, University of Maryland, College Park, MD, 11/15/1999
- “Bose-Einstein condensation and the atom laser,” Society of Physics Students, Morgan State University, Baltimore, MD, 11/3/1999
- “Multiboson processes: coherent matter-wave analogues of multiphoton physics,” Eighth International Conference on Multiphoton Processes, Monterey, California, 10/6/1999
- “Vortices and solitons in trapped Bose gases,” Tenth International Conference on Recent Progress in Many-Body Theories, Seattle, Washington, 9/14/1999
- “The designer supergas,” Physics Colloquium, University of Bristol, Bristol, England, 6/14/1999
- “The designer supergas,” John Anderson Research Colloquium, University of Strathclyde, Glasgow, Scotland, 5/24/1999
- “The designer supergas,” Atomic and Laser Seminar, Clarendon Laboratory, University of Oxford, Oxford, England, 5/10/1999
- “The designer supergas,” Laser Spectroscopy Seminar, Imperial College, London, England, 5/7/1999
- “The designer supergas,” Physics Department Colloquium, State University at Stony Brook, Stony Brook, NY, 3/16/1999
- “Generating solitons and vortices in BECs by trap rotation and optical imprinting,” Workshop on Bose-Einstein Condensation and Degenerate Fermi Gases, Boulder, CO, 2/12/1999
- “Structure and spectra of Bose-Einstein condensates,” Atomic Physics Seminar, University of Virginia, Charlottesville, VA, 11/23/1998
- “Structure and spectra of Bose-Einstein condensates,” Department of Physics and Astronomy Colloquium, University of Nebraska, Lincoln, NE, 10/22/1998
- “Structure and spectra of Bose-Einstein condensates,” Supercomputing, Collision Processes and Applications, Queen's University of Belfast, Northern Ireland, 9/14/1998

- “Coherence properties of atom lasers at finite temperature,” 7th International Workshop on Laser Physics, Berlin, Germany, 7/7/1998
- “Modern BEC from the AMO perspective,” Gordon Conference on Multiphoton Processes, Tilton, NH, 6/18/1998
- “Bose-Einstein condensation, the atom laser, and nanokelvin thermometry,” Distinguished LMS Lectureship, Laboratory for Molecular Sciences, California Institute of Technology, Pasadena, CA, 3/20/1998
- “Structure and spectra of Bose-Einstein condensates,” Atomic Physics Seminar, University of Southern California, Los Angeles, CA, 3/19/1998
- “Collective excitations and coherence of Bose-Einstein condensates,” Pennsylvania State University Physics Department Condensed, Atomic and Molecular Physics (CAMP) Seminar, State College, PA, 11/10/1997
- “Collective excitations and coherence of Bose-Einstein condensates,” Western Washington University Physics Department Colloquium, Bellingham, WA, 10/22/1997
- “Collective excitations and coherence of Bose-Einstein condensates,” University of Maryland Optical Interactions Seminar, College Park, MD, 10/2/1997
- “Structure and spectra of trapped-atom Bose-Einstein condensates,” Statistical Physics Seminar, University of Maryland, College Park, MD, 9/16/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Quantum Optics IV, Jaszowiec, Poland, 6/19/1997
- “The NIST Digital Mathematical Library,” NIST Center for Theoretical and Computational Materials Science Seminar, Gaithersburg, MD, 6/10/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Quantum Electronics and Laser Science Conference (QELS '97), Baltimore, MD, 5/20/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Royal Holloway, University of London, Egham, England, 5/16/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” University of Birmingham, Birmingham, England, 5/15/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” University of Manchester, Manchester, England, 5/12/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Dublin City University, Dublin, Ireland, 5/9/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Queen's University of Belfast, Belfast, Northern Ireland, 5/6/1997
- “Atomic, molecular, and optical physics from an American perspective,” Review Day for Atomic, Molecular, and Optical Physics, Engineering and Physical Sciences Research Council, London, England, 3/11/1997
- “Closed-form solutions of the Schrödinger equation for a class of smoothed Coulomb potentials,” Rochester Theory Center for Optical Science and Engineering, University of Rochester, Rochester, NY, 2/26/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Rochester Theory Center for Optical Science and Engineering, University of Rochester, Rochester, NY, 2/25/1997
- “Structure and spectra of atomic Bose-Einstein condensates,” Center for Research and Education in Optics and Lasers, University of Central Florida, Orlando, FL, 2/12/1997
- “Finite-temperature and time-dependent phenomena in dilute Bose-Einstein condensates,” Atom Laser Workshop, University of Arizona, Tucson, AZ, 1/23/1997

- “Structure and spectra of atomic Bose-Einstein condensates,” Joint Atomic Physics Colloquium, Harvard University, Cambridge, MA, 12/4/1996
- “Structure and spectra of atomic Bose-Einstein condensates,” Physics Colloquium, Tulane University, New Orleans, LA, 11/25/1996
- “Structure and spectra of atomic Bose-Einstein condensates,” Physics Department Colloquium, Toledo University, Toledo, OH, 11/14/1996
- “Theory of Bose-Einstein condensation,” European Research Conference on Quantum Optics, Castelvechio Pascoli, Italy, 9/26/1996
- “Excitation and engineering of atomic Bose-Einstein condensates,” 1996 Annual Congress, Canadian Association of Physicists, Ottawa, Ontario, Canada, 6/18/1996
- “Standard reference data for electronic structure calculations,” Complex Systems Theory Branch Seminar, Naval Research Laboratory, Washington, DC, 4/10/1996
- “Structure and spectra of dilute atomic Bose-Einstein condensates,” Complex Systems Theory Branch Seminar, Naval Research Laboratory, Washington, DC, 4/10/1996
- “Metrology on the internet,” 25th Measurement Science Conference, Anaheim, CA 1/26/1996
- “New angle on the Coulomb problem,” Atomic and Molecular Theory Seminar, JILA, University of Colorado, Boulder, CO, 12/4/1995
- “Spectroscopy of Bose-Einstein condensates,” Physics Colloquium, University of Delaware, Newark, DE, 11/8/1995
- “Appearance intensities for multiply charged ions in a strong laser field,” Workshop on Multiparticle Atomic Systems in Intense Laser Fields, Institute for Theoretical Atomic, Molecular, and Optical Physics, Cambridge, MA, 10/21/1995
- “Computational physics at NIST,” April Meeting of the American Physical Society, Washington, DC, 4/19/1995
- “High-harmonic generation by atoms in strong laser fields,” Theory Seminar, Institut für Festkörperforschung, Forschungszentrum Jülich, Jülich, Germany, 5/6/1994
- “Laser-atom interaction at high intensities,” Chemical Physics Seminar, University of Maryland, College Park, MD, 4/13/1994
- “Solution of the time-dependent Schrödinger equation,” International Conference on Quantum Optics III, Szczyrk, Poland, 9/6/1993
- “Harmonic generation with circularly polarized light,” Strong-Field Workshop, Center for Ultrafast Optical Science, University of Michigan, Ann Arbor, MI, 7/11/1993
- “Highly nonlinear effects in atoms in strong laser fields,” Physics Department Colloquium, Temple University, Philadelphia, PA, 2/15/1993
- “Sequential vs. simultaneous ionization of two-electron atoms by strong laser fields,” NATO Advanced Research Workshop on Super-Intense Laser-Atom Physics, Han-sur-Lesse, Belgium, 1/13/1993
- “Order and chaos in the spectra of highly-excited atoms, or Big as a Bug !” Society of Physics Students, Northern Virginia Community College, Annandale, VA, 4/16/1992
- “Strong-field laser-atom interaction: applications of massively parallel processing,” Annual Meeting, Collaborative Computational Project 2 - Continuum States of Atoms and Molecules, University College London, London, England 4/3/1992
- “Structure and Spectroscopy of Atoms,” Summer School on Atomic and Molecular Physics and Quantum Optics, Department of Theoretical Physics, Australian National University, Canberra, Australia, six one-hour lectures, 1/1992

- “Atoms in strong radiation fields,” Physics Colloquium, University of Delaware, Newark, DE, 5/24/1991
- “Negative-ion resonances and surface dynamics,” Seminar, Cavendish Laboratory, Cambridge University, England, 4/18/1991
- “Experience with massively parallel processing on the Connection Machine,” Satellite Meeting on Multiphoton Absorption, Royal Holloway and Bedford New College, Egham, England, 4/12/1991
- “Atoms in strong fields,” 2nd National Conference on Atomic, Molecular, and Optical Physics, Royal Holloway and Bedford New College, Egham, England, 4/11/1991
- “Lanthanum  $N_{IV,V} \rightarrow O_{II,III}$  x-ray emission spectra and  $f$ -occupancy-induced multiplet structure,” Sixth NIST Superconductivity Information Exchange Meeting, Gaithersburg, MD, 3/27/1991
- “Order and chaos in the spectra of highly-excited atoms,” Physics Seminar, Towson State University, Towson, MD, 12/4/1990
- “High-order perturbation theory of atoms in strong radiation fields,” First International Conference on Coherent Radiation Processes in Strong Fields, Catholic University of America, Washington, DC, 6/19/1990
- “Atomic physics in the solid state: Giant resonances, excitons, and high-temperature superconductivity,” Physics Department Colloquium, University of Connecticut, Storrs, CT, 2/16/1990
- “Progress towards the production of intense coherent radiation in the soft x-ray region,” Winter College on High-Resolution Spectroscopy, International Center for Theoretical Physics, Trieste, Italy: two two-hour lectures, 1/22-23/1990
- “Progress towards the production of intense coherent radiation in the soft x-ray region,” International Conference on Lasers in Science and Technology, University of Jordan, Amman, Jordan, 10/14/1989
- “Photoabsorption and electron energy loss spectroscopy of  $YBa_2Cu_3O_{7,\delta}$ ,” Fifth NIST Superconductivity Information Exchange Meeting, Boulder, CO, 9/21/1989
- “Ditriakontapole excitation in high-temperature superconductors,” NIST Surface Science Lunch Bunch, Gaithersburg, MD, 9/11/1989
- “High harmonic generation in hydrogenic ions: comparison of perturbative and non-perturbative calculations,” Conference on Super-Intense Laser-Atom Physics, University of Rochester, Rochester, NY, 6/29/1989
- “High harmonic generation in hydrogenic ions,” X-Ray Laser Group Seminar, Princeton Plasma Physics Laboratory, Princeton, NJ, 3/2/1989
- “Giant resonances in electron and photon excitation of atoms,” NIST Staff Research Seminar Series, Gaithersburg, MD, 2/2/1989
- “Highly-excited atoms,” Twentieth Anniversary Reunion of Sigma Pi Sigma, Montgomery College, Takoma Park, MD 12/2/1988
- “Atomic physics in the solid state: Giant resonances, excitons, and high-temperature superconductivity,” Physics Department Colloquium, University of Maryland at Baltimore County, Catonsville, MD, 11/9/1988
- “Weak-field limits and asymptotic behavior,” NATO Advanced Study Institute on Atoms in Strong Fields, Kos, Greece, 10/10/1988
- “Computational studies of atoms in strong fields,” International Laser Science Conference, Atlanta, GA, 10/3/1988

- “Computation of high-order perturbation theory for atoms in radiation fields,” International Colloquium on Atoms in Strong Fields, Grainau, West Germany, 9/7/1988
- “How many of the alkaline earths have stable negative ions?” Theoretical Chemistry Seminar, National Hellenic Research Foundation, Athens, Greece, 1/15/1988
- “How many of the alkaline earths have stable negative ions?” Quantum Electronics Seminar, State University of New York, Stony Brook, NY, 10/30/1987
- “Theory of highly-excited atoms in electric and magnetic fields,” Symposium on Atomic Spectroscopy and Highly-Ionized Atoms, Hickory Ridge Conference Center, Lisle, IL, 8/17/1987
- “Atomic negative ion resonances,” International Conference on the Physics of Electronic and Atomic Collisions, Brighton, England, 7/31/1987
- “Doubly-excited states of negative ions,” Physics Colloquium, College of William and Mary, Williamsburg, VA, 2/13/1987
- “Doubly-excited states of atoms and negative ions,” Atomic Physics Seminar, University of Virginia, Charlottesville, VA, 11/12/1986
- “Giant resonances in the transition regions of the periodic table,” NATO Advanced Study Institute on Giant Resonances in Atoms, Molecules, and Solids, Les Houches, France, 6/18/1986
- “Doubly-excited states of negative ions and atoms,” Mathematics Colloquium, Royal Holloway and Bedford New College, University of London, Surrey, England, 6/13/1986
- “Multiphoton excitation of autoionizing states,” Workshop on Multiphoton Ionization of Atoms by Strong Fields, University of Paris, Orsay, France, 4/29/1986
- “Autodetaching states of negative ions,” Fourth Australian Conference on Atomic and Molecular Physics and Quantum Chemistry, University of Tasmania, Hobart, Tasmania, Australia, 1/29/1986
- “Highly-excited atoms in electric and magnetic fields,” Australian National University, Research School of Physical Sciences, Canberra, Australia, 1/23/1986
- “Rydberg states in electric and magnetic fields,” Physics Colloquium, University of Delaware, Newark, DE, 12/4/1985
- “Autodetaching states of negative ions,” First International Conference on Laser Science, Dallas, TX, 11/18/1985
- “Excited atoms in electric and magnetic fields,” Chemical Physics Seminar, University of Maryland, College Park, MD, 10/2/1985
- “Autodetaching and core-excited states of negative ions,” Gordon Conference on Atomic Physics, Wolfeboro, NH, 7/4/1985
- “Highly-excited atoms in electric and magnetic fields,” Theoretical and Statistical Physics Group, Los Alamos National Laboratory, Los Alamos, NM, 6/4/1985
- “Multiphoton excitation of autoionizing states,” Physics Division, Argonne National Laboratory, Argonne, IL, 2/7/1985
- “Chemical and spectroscopic consequences of the lanthanide contraction,” Physics Department, Univ. of Illinois at Urbana-Champaign, Urbana, IL, 2/5/1985

## — Publications

## — Unique author identification codes

Google Scholar: [Charles W. Clark](#)

ORCID ID: [0000-0001-8724-9885](#)

Research Gate: [Charles\\_Clark2](#)

Scopus Author ID: [7403546091](#)

## — Patents

“Controller for and controlling neutron orbital angular momentum,” C. W. Clark, M. G. Huber, D. A. Pushin and R. A. Barankov, [US Patent Application 20160360605](#), 12/8/2016

“Noble-gas-excimer detectors of slow neutrons,” C. W. Clark, P. P. Hughes, M. A. Coplan, A. K. Thompson and R. E. Vest, [U.S. Patent No. 8,816,296](#), issued 8/26/2014

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